

# AYK Chinook and Chum Salmon Marine Research Overview

A Report to the Alaska Board of Fisheries



Presented by Sabrina Garcia and Dr. Kathrine Howard  
January 2023



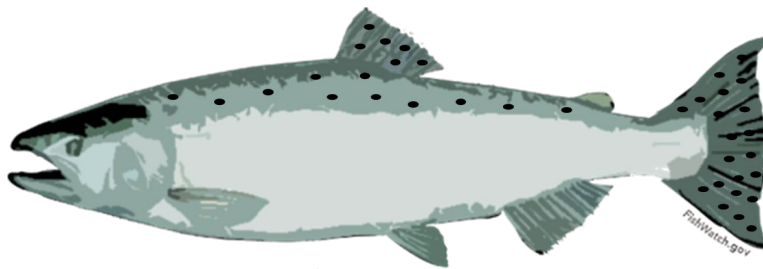




1981 → 2022

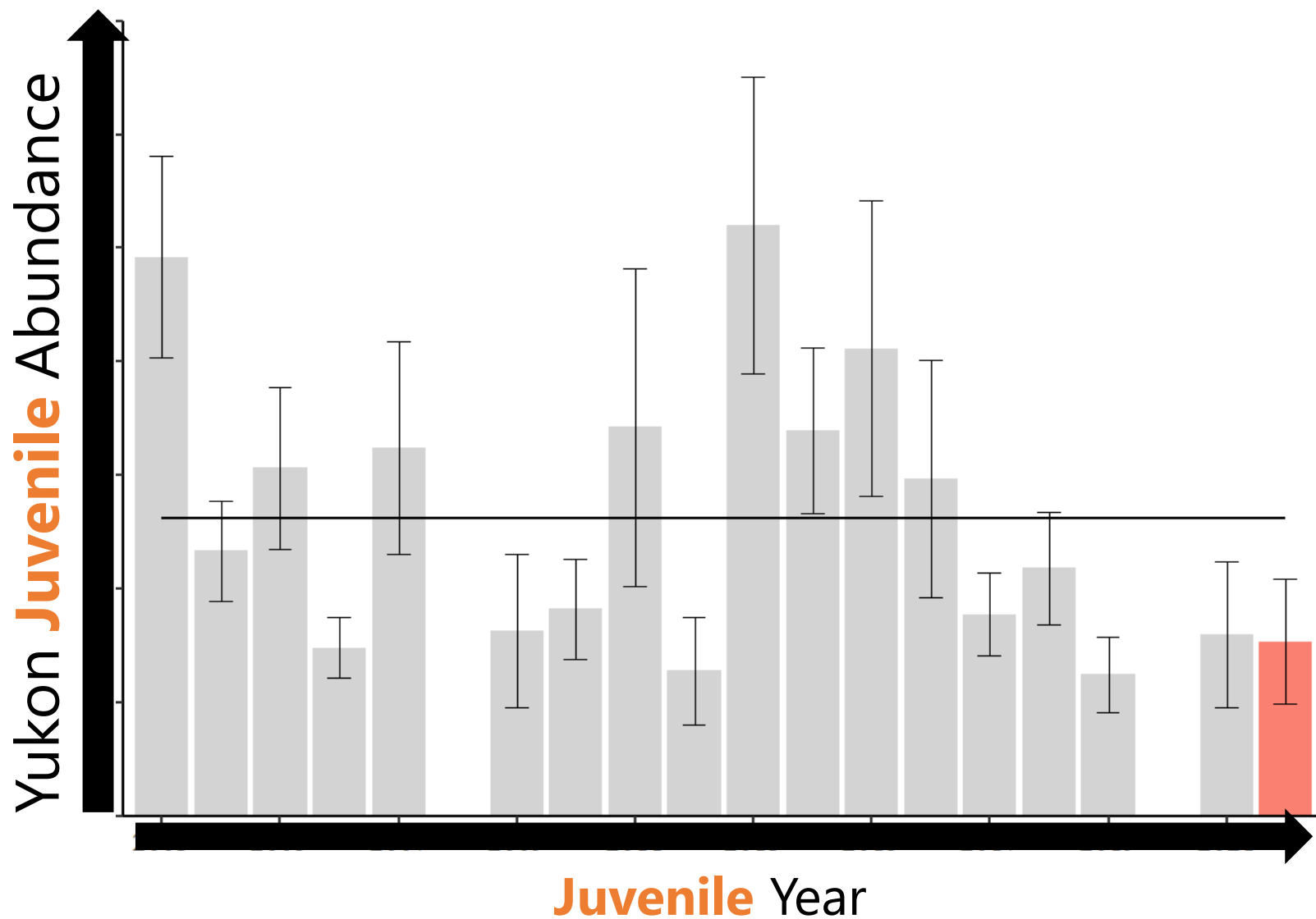
**Yukon River stocks**

- What is driving these concurrent declines in Yukon River Chinook and chum salmon?
- Are both of these important salmon species responding to the same drivers?
- At what life stage is the problem occurring?

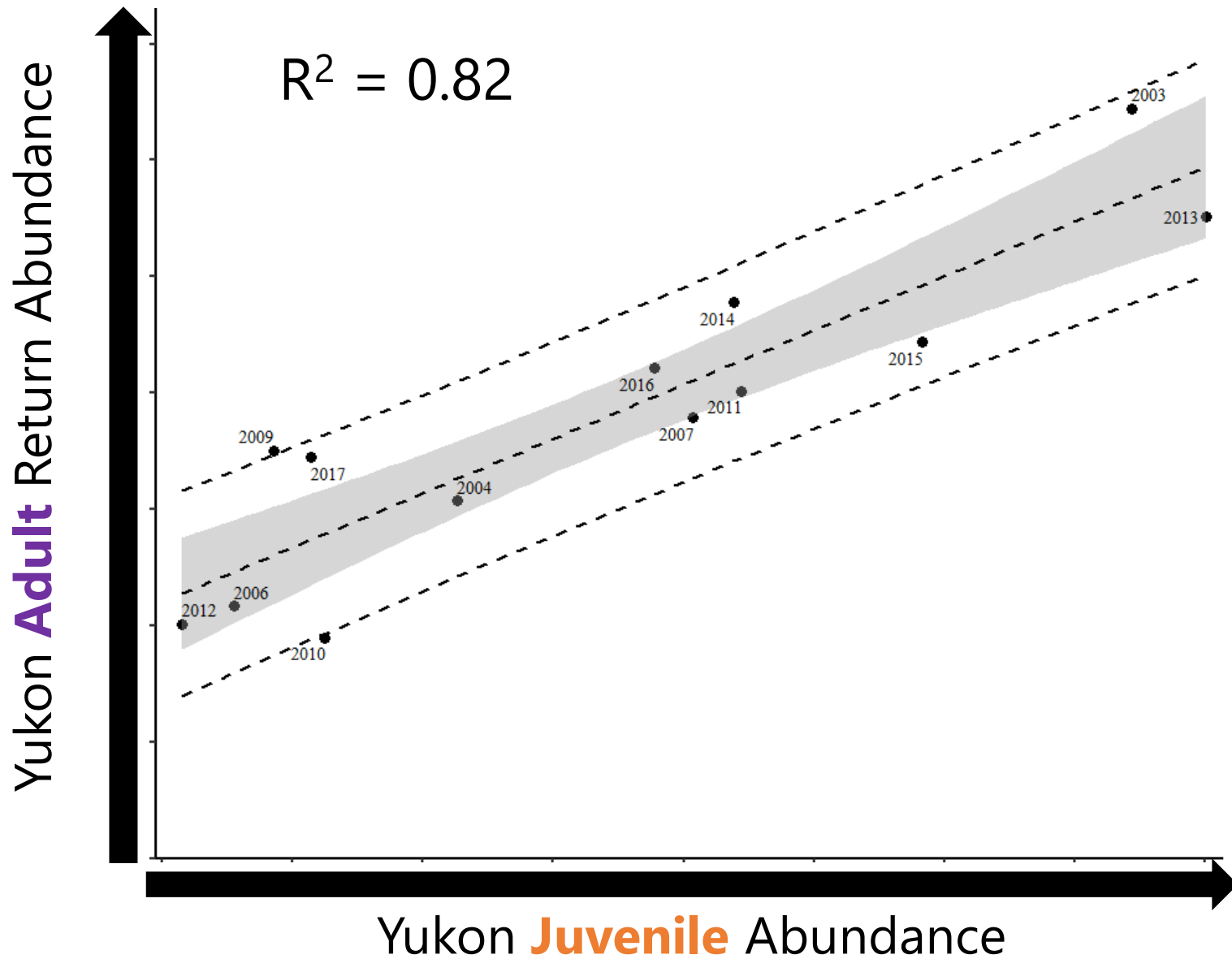




# Chinook salmon



# Chinook salmon



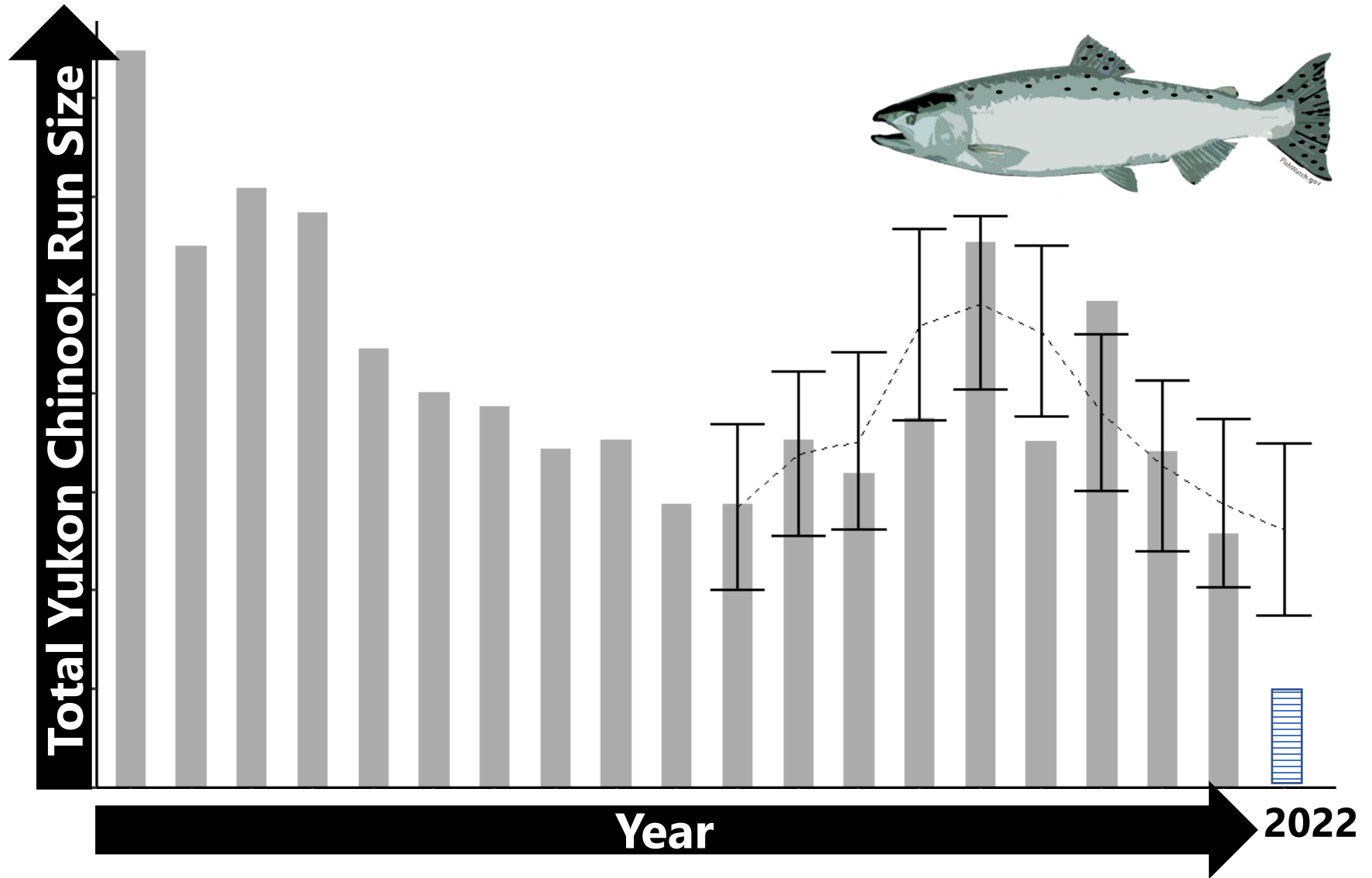
RIVER

**Future run size of Yukon Chinook Salmon is determined very early in their life – before their first winter at sea**

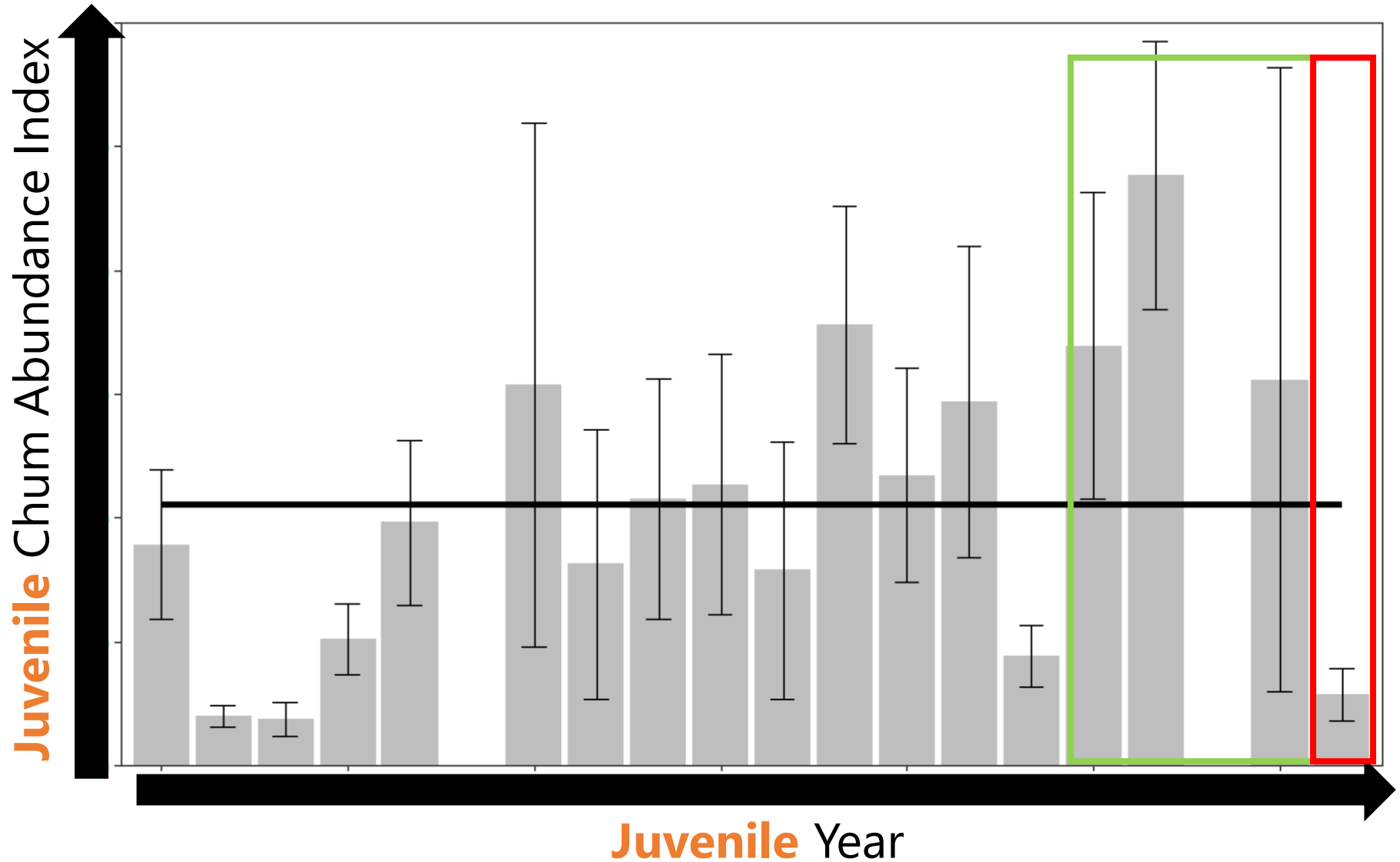


OCEAN



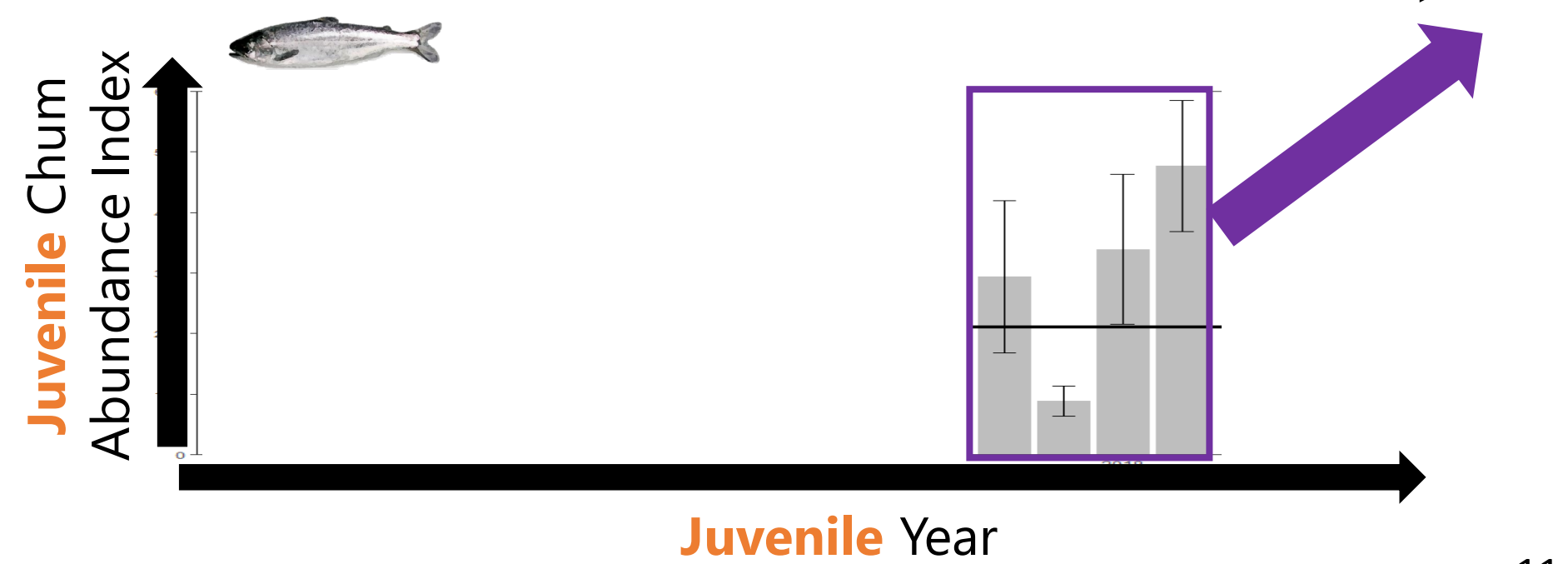


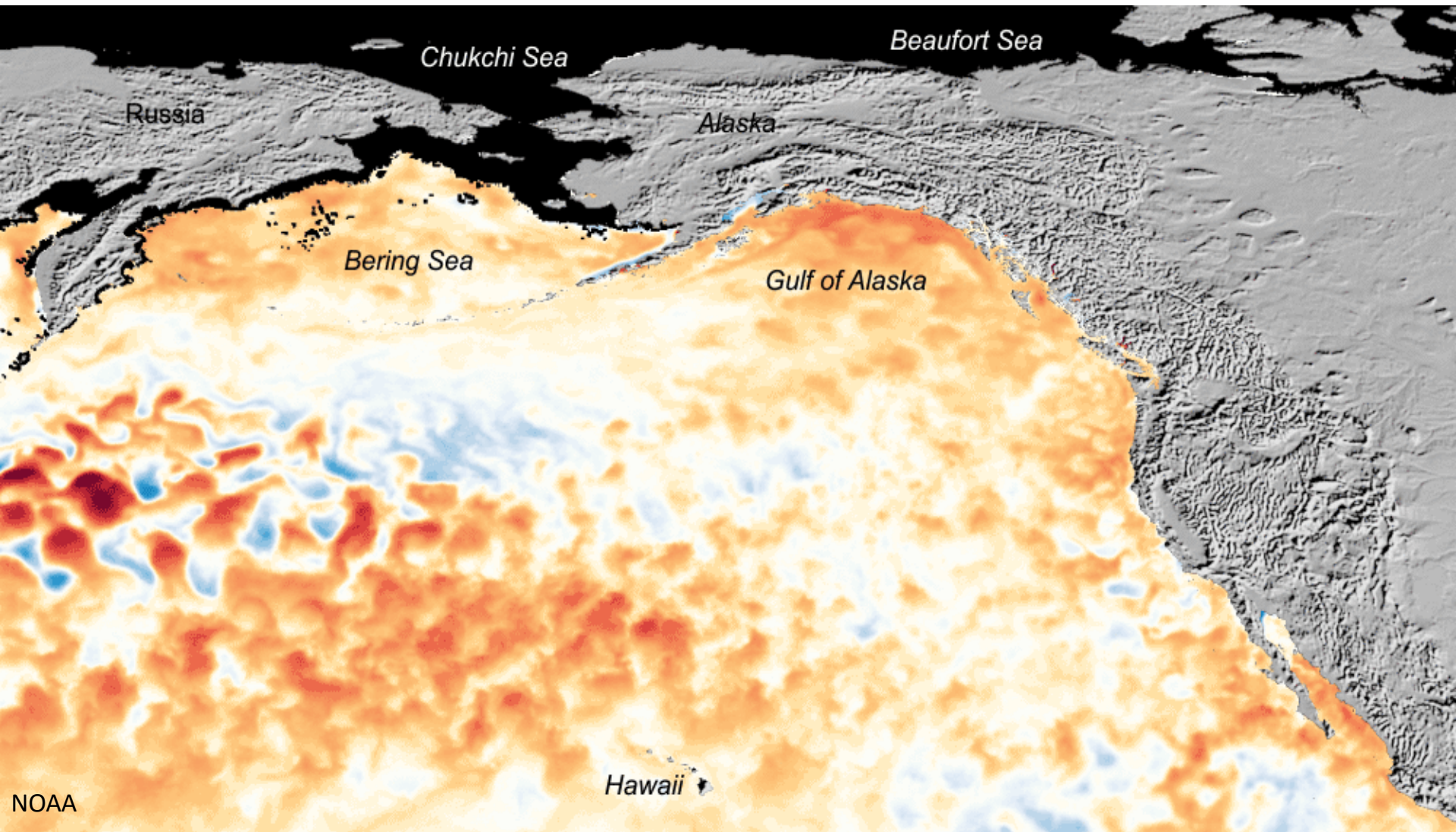
# Chum salmon (mixed stocks)



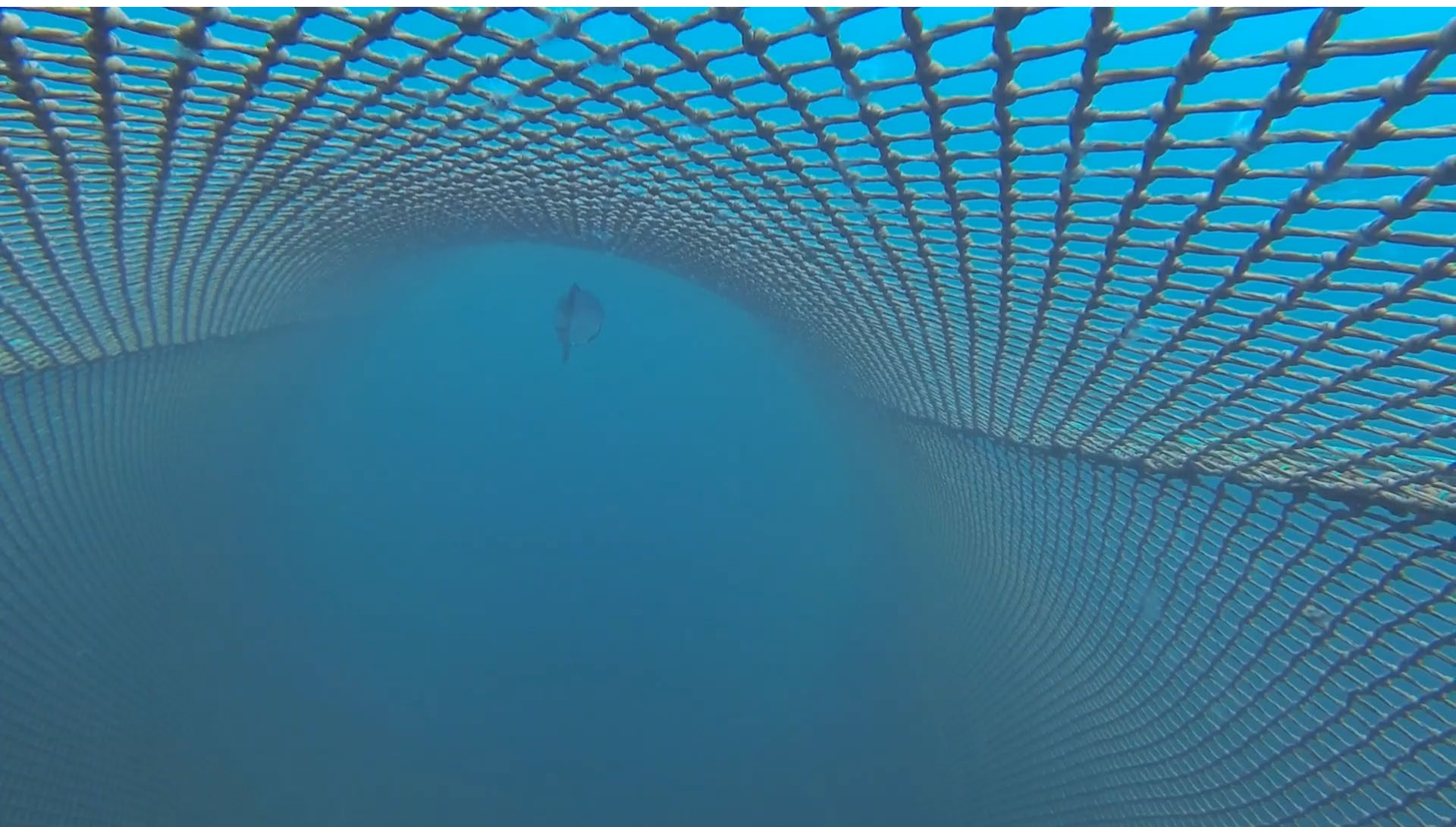


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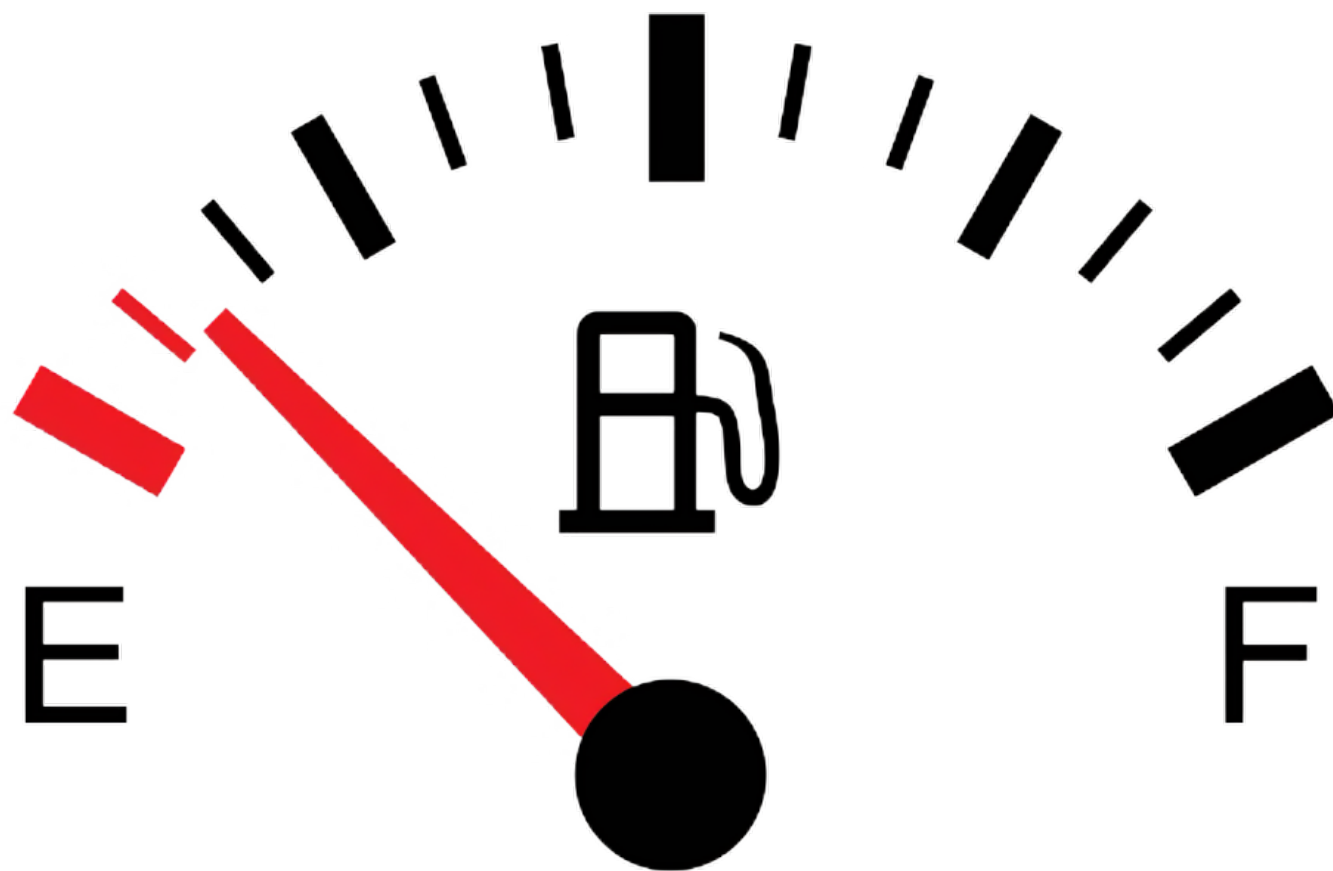










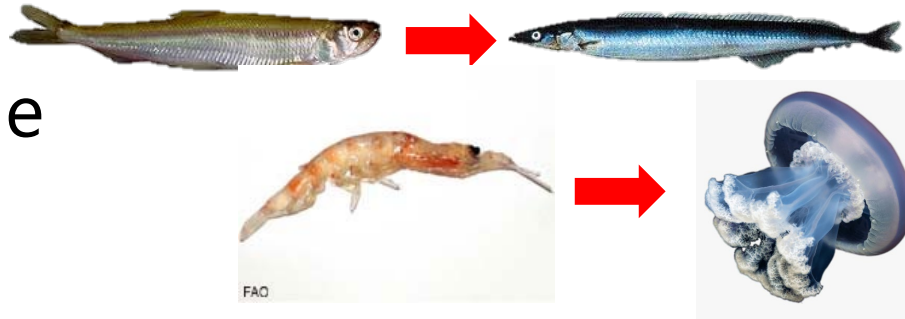


# Temperature Changes Affect Salmon

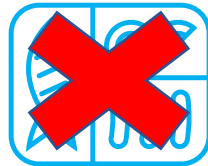
Stocks moving north



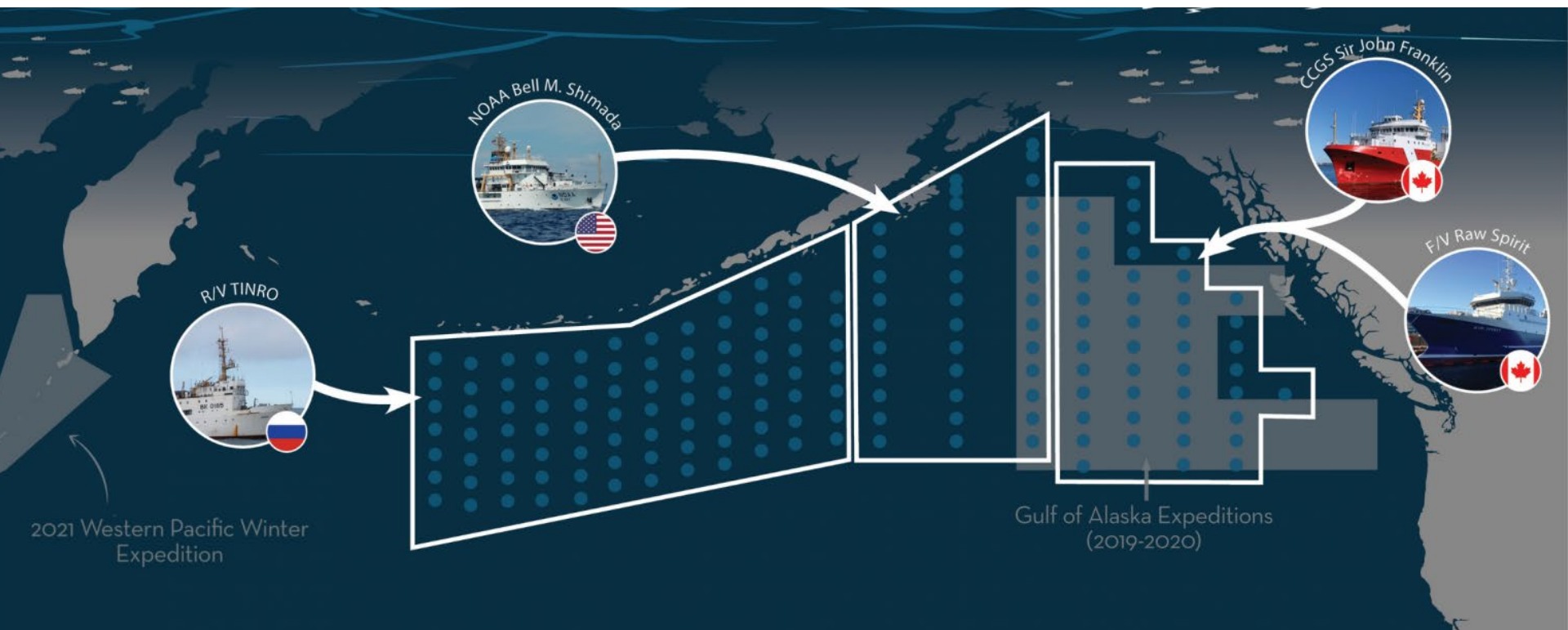
Different food available



Empty stomachs

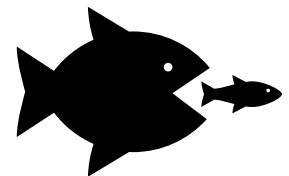
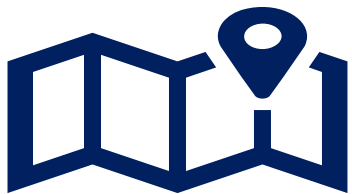


Increasing ocean temperatures  = poorer condition



# 2022 Pan-Pacific Expedition

North Pacific Anadromous Fish Commission/International Year of the Salmon



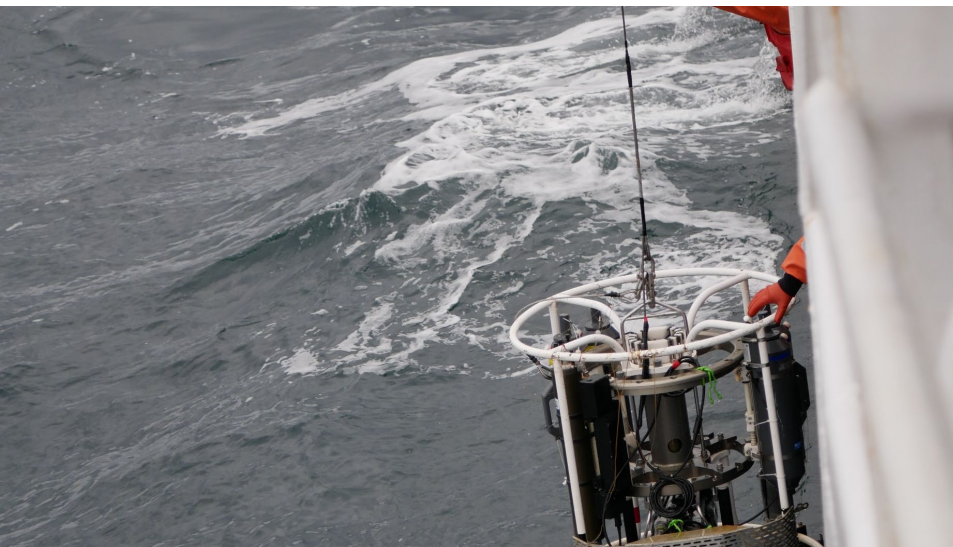
# Northern Bering Sea Survey



# Southern Bering Sea Survey





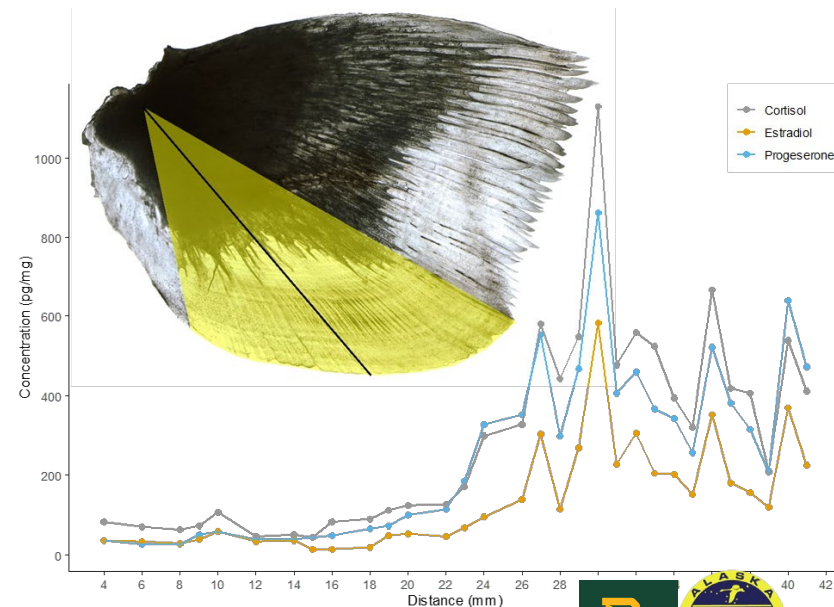
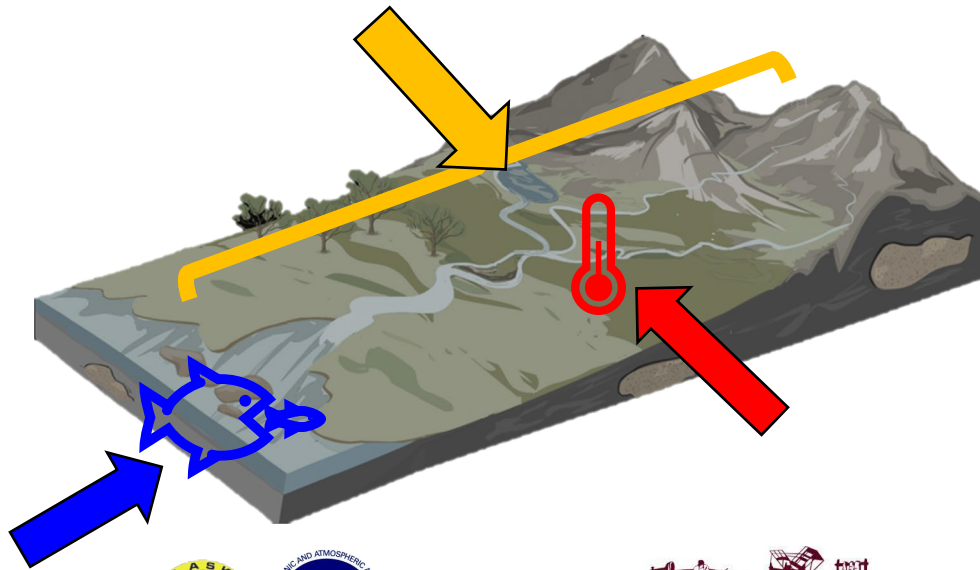




Predicted Chinook Abundance based on  
SST and Chlorophyll from 5 May 2019



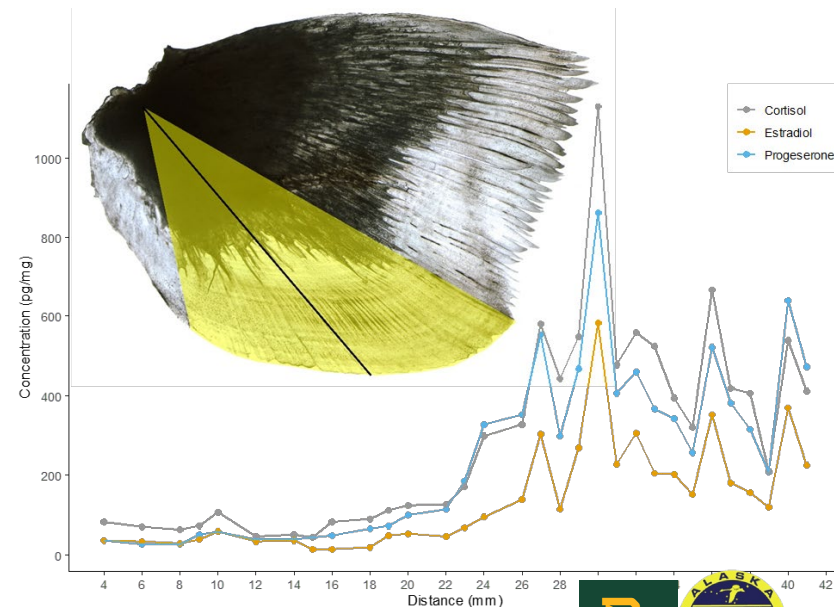
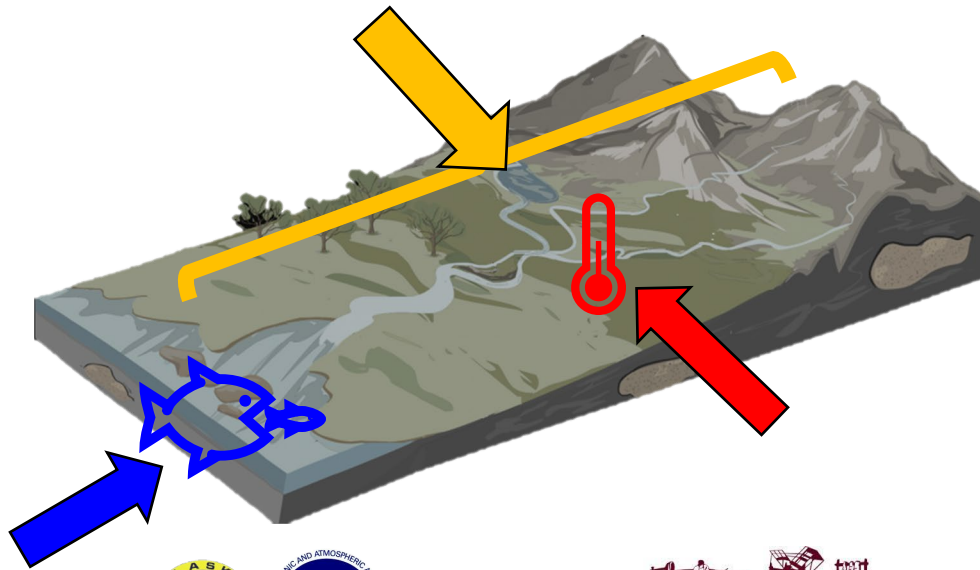
- Exploring linkages between a changing climate and productivity of Yukon River Chinook Salmon
- Species distribution models for Chinook Salmon in the Bering Sea
- Determinants of life history in Yukon River chum salmon



Predicted Chinook Abundance based on SST and Chlorophyll from 5 May 2019



- Exploring linkages between a changing climate and productivity of Yukon River Chinook Salmon
- Species distribution models for Chinook Salmon in the Bering Sea
- Determinants of life history in Yukon River chum salmon



# Thank you!

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